

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2004/005503

A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl⁷ A61K45/00, 31/404, 31/4045, 31/405, 31/407, 31/553, C07D403/04,
403/14, 498/22, A61P25/28, 25/08, 25/22, 25/18, 25/24, C07D487/14

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl⁷ A61K45/00, 31/404, 31/4045, 31/405, 31/407, 31/553, C07D403/04,
403/14, 498/22, A61P25/28, 25/08, 25/22, 25/18, 25/24, C07D487/14

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Jitsuyo Shinan Koho 1922-1996 Toroku Jitsuyo Shinan Koho 1994-2004
Kokai Jitsuyo Shinan Koho 1971-2004 Jitsuyo Shinan Toroku Koho 1996-2004

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
CAPLUS (STN), BIOSIS (STN), REGISTRY (STN), EMBASE (STN), MEDLINE (STN)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 02/062387 A1 (SMITHKLINE BEECHAM P.L.C.), 15 August, 2002 (15.08.02), Full text; particularly, Claims 1 to 12 (Family: none)	1-3, 20, 37, 38, 40, 41 4-19, 21-36
X	WO 99/42100 A1 (Sagami Chemical Research Center), 26 August, 1999 (26.08.99), Full text; particularly, Claims 1 to 19; compound No.13 & EP 1057484 A1	1-3, 5-7, 20, 22-24, 37, 38, 40, 41
X	JP 2-306974 A (Goedecke AG.), 20 December, 1990 (20.12.90), Full text; particularly, Claims 1 to 7 & EP 397060 A3	1-3, 5-7, 20, 22-24, 37, 38, 40, 41

☒ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search
09 June, 2004 (09.06.04)

Date of mailing of the international search report
29 June, 2004 (29.06.04)

Name and mailing address of the ISA/
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

International application No.

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 01/13916 A1 (Sagami Chemical Research Center), 01 March, 2001 (01.03.01), Full text; particularly, Claims 1 to 17; compound Nos. 15, 16 & EP 1224932 A1	1-3, 5, 6, 8, 10, 20, 22, 23, 25, 27, 37, 38, 40, 41
X	JP 7-508268 A (Goedecke AG.), 14 September, 1995 (14.09.95), Full text; particularly, Claims 1 to 15 & US 5883114 A	1-3, 5, 6, 20, 22, 23, 37, 38, 40, 41
X	WO 00/38675 A1 (SMITHKLINE-BEECHM P.L.C.), 06 July, 2000 (06.07.00), Full text; particularly, Claims 1 to 11; examples & EP 1140070 A1	1-3, 5, 9, 10, 20, 22, 26, 27, 37, 38, 40, 41
X	LOAST, Maryse et al., Paullones are potent inhibitors of glycogen synthase kinase-3 β and cyclin-dependent kinase 5/p25, Eur. J. Biochem., 2000, Vol.267, pages 5983 to 5994; full text, particularly, page 5983; Fig. 2	1-3, 5, 11-15, 20, 22, 28-32, 37, 38, 40, 41
X	WO 01/37819 A2 (CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE), 31 May, 2001 (31.05.01), Full text; particularly, Claims 1 to 15 & JP 2003-514850 A	1-3, 16-20, 33-38, 40, 41
X	CHEN, Guang et al., Enhancement of hippocampal neurogenesis by lithium, Journal of Neuro chemistry, 2000, Vol.75, pages 1729 to 1734;	1-4, 20, 21, 37, 38, 40, 41
Y	full text; particularly, page 1729, abstract	5-19, 22-36

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Box No. I Nucleotide and/or amino acid sequence(s) (Continuation of item 1.b of the first sheet)

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, the international search was carried out on the basis of:
 - a. type of material
 - ☒ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material
 - ☒ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing
 - ☐ contained in the international application as filed
 - ☒ filed together with the international application in computer readable form
 - ☐ furnished subsequently to this Authority for the purposes of search
2. ☒ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
3. Additional comments:

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Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 39
because they relate to subject matter not required to be searched by this Authority, namely:
Claim 39 pertains to methods for treatment of the human body by therapy.
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:
(See extra sheet.)

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☒ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

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Continuation of Box No.III of continuation of first sheet(2)

It appears that the matter common to nerve degeneration drugs containing as the active ingredient the compounds having specific structures represented by the formulae (I) to (V) as set forth in claims 1 to 41 resides in "a nerve degeneration drug containing as the active ingredient a substance inhibiting the activity of a glycogen synthase kinase-3".

On the other hand, a nerve degeneration drug containing a substance inhibiting the activity of a glycogen synthase kinase-3 as the active ingredient is reported in the following document. Thus, the constitution of the above common matter cannot be considered as being novel and, therefore, cannot be regarded as the gist of the invention.

Such being the case, the nerve degeneration drugs containing as the active ingredient the compounds represented by the five different formulae as set forth in claims 1 to 41 cannot be regarded as a group of inventions so linked as to form a single general inventive concept.

Document: WO 02/062387 A1 (SMKTHKLINE BEECHAM P.L.C.) 2002.08.15